

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A three-dimensional image display device for displaying a three-dimensional image by irradiating illuminating light at an optical wavefront control unit having a display device recording which records a control image, comprising:

a control image optimizing unit configured to:

calculate three-dimensional images corresponding to a group of control images based on information regarding the optical wavefront control unit in the form of constraints inherent to specifying a region of a three-dimensional image on which change of a pixel on the optical wavefront control unit has an effect;[[,]]

select a control image corresponding to the three-dimensional image satisfying a predetermined condition from the group of control images[[,]]; and

record the selected control image on the optical wavefront control unit, wherein,

the control image optimizing unit is configured to calculate a three-dimensional image ($g_0(x, y)$) with the inside of the visual region defined by the characteristics of a display device as a region to be calculated for each pixel of the initial solution ($U_0(k, l)$),

pixels constituting a control image have a uniform size, and

the size of the visual region formed by illuminating light of intensity above a certain level reaching the reconstructed image display unit is determined based on the amplitude of illuminating light passing through each pixel the constraints are information regarding an optical wavefront control unit and a condition restricting a region to be calculated so as to calculate, on a control image basis, a three-dimensional image corresponding to the control image recorded in the optical wavefront control unit, the region to be calculated being a

~~region of the three-dimensional image affected by change of a pixel on the optical wavefront control unit.~~

Claim 2 (Original): The three-dimensional image display device as set forth in claim 1, wherein the control image optimizing unit is configured to generate the group of control images by sequentially performing change processing on part of the control image, and sequentially calculate the three-dimensional images based on difference information about the control images before and after the change processing.

Claim 3 (Original): The three-dimensional image display device as set forth in claim 1, wherein the control image optimizing unit is configured to calculate the three-dimensional image in a region to be calculated defined by the constraints.

Claim 4 (Currently Amended): The three-dimensional image display device as set forth in claim 3, wherein[:],

the control image is constituted by phase distribution of an optical wavefront[[;]], and the control image optimizing unit is configured to calculate the region to be calculated, based on a range in which phase modulation is possible on [[a]] the display device constituting the optical wavefront control unit, and accuracy of the phase modulation.

Claim 5 (Original): The three-dimensional image display device as set forth in claim 4, wherein the control image optimizing unit is configured to calculate the region to be calculated, also taking account of amplitude modulation which occurs with the phase modulation.

Claim 6 (Currently Amended): The three-dimensional image display device as set forth in claim 3, wherein[:],

the control image is constituted by amplitude distribution of an optical wavefront[[;]], and

the control image optimizing unit is configured to calculate the region to be calculated, based on a range in which amplitude modulation is possible on [[a]] the display device constituting the optical wavefront control unit, and accuracy of the amplitude modulation.

Claim 7 (Original): The three-dimensional image display device as set forth in claim 6, wherein the control image optimizing unit is configured to calculate the region to be calculated, also taking account of phase modulation which occurs with the amplitude modulation.

Claim 8 (Currently Amended): A three-dimensional image display method for displaying a three-dimensional image by irradiating illuminating light at an optical wavefront control unit having a display device recording which records a control image, comprising:

calculating three-dimensional images corresponding to a group of control images based on information regarding the optical wavefront control unit in the form of constraints specifying a region of a three-dimensional image on which change of a pixel on inherent to the optical wavefront control unit has an effect;

selecting a control image corresponding to the three-dimensional image satisfying a predetermined condition from the group of control images; and

displaying the selected control image on the optical wavefront control unit, wherein,

three-dimensional images ($g_0(x, y)$) are calculated with the inside of the visual region defined by the characteristics of a display device as a region to be calculated for each pixel of the initial solution ($U_0(k, l)$),

pixels constituting a control image have a uniform size, and
the size of the visual region formed by illuminating light of intensity above a certain
level reaching a reconstructed image display unit is determined based on the amplitude of
illuminating light passing through each pixel the constraints are information regarding an
optical wavefront control unit and a condition restricting a region to be calculated so as to
calculate, on a control image basis, a three-dimensional image corresponding to the control
image recorded in the optical wavefront control unit, the region to be calculated being a
region of the three-dimensional image affected by change of a pixel on the optical wavefront
control unit.

Claim 9 (Canceled).

Claim 10 (New): The three-dimensional image display device as set forth in claim 1, wherein the control image optimizing unit is configured to determine the region to be calculated, based on a range in which phase modulation is possible on the display device constituting a part of the optical wavefront control unit and the accuracy of phase modulation.